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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,136	02/27/2002	John C. Vellinger	10561.117936	5064

7590 10/10/2003

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EXAMINER

SORKIN, DAVID L

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/084,136	Applicant(s) VELLINGER ET AL.	
	Examiner David L. Sorkin	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 21-36, 42 and 43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20, 37-41 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>9/11/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-20, 37-41 and 44, drawn to magnetic mixing apparatus, classified in class 366, subclass 274.
- II. Claims 21-36, 42 and 43, drawn to a method of mixing, classified in class 366, subclass 348.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the impeller could be driven by a rotating magnetic field rather than the "rapidly rising and falling electromagnetic field".

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Robert Eichenberger on 25 September 2003 a provisional election was made without traverse to prosecute the invention of

Art Unit: 1723

Group I, claims 1-20, 37-41 and 44. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-36, 42 and 43 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

7. In the drawings, the labels "FIG. 1a", "FIG. 1b", "FIG. 4a", "FIG. 4b", "FIG. 6a" and "FIG. 6b" should each appear.

8. Figure 1a should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

9. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-20, 37-41 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

Art Unit: 1723

matter which applicant regards as the invention. It is unclear if the "liquid sample" is a required element of the claimed structure. As held in *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969), "[e]xpressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim". Also, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims" *In re Otto* 136 USPQ 458, 459 (CCPA 1963). In light of these decisions, if applicant desires to claim the combination of the apparatus and the liquid sample, the preamble should not be "An apparatus for mixing liquids comprising" but instead, for example, -- A kit comprising --. Applicant should clearly state on the record whether the liquid sample is a required element of the claimed structure.

Claim 15 further rendered indefinite by the use of the registered trademark EPPENDORF TUBE. As stated in MPEP 2173.05(u), "If the trademark or tradename is used in a claim as a limitation to identify a particular material or product, the claim does not comply with 35 U.S.C. 112, second paragraph. *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982)".

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1723

13. Claims 1-6, 8, 9, 10, 15 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by MacMichael et al. (US 4,759,635). Regarding claim 1, MacMichael ('635) discloses an apparatus for mixing liquids comprising a liquid sample (L) within a liquid container (12,20); a magnetic impeller (26) located in said sample container; and an electromagnetic driver (16,18) located in proximity to said magnetic impeller wherein said electromagnetic driver is powered by a signal generator (see col. 3, lines 23-28). Regarding claim 2, said magnetic impeller has a magnetic field coupled to an electromagnetic field of said electromagnetic driver (see col. 4, lines 16-20). Regarding claim 3, said signal generator produces a signal of programmed frequency and current (see col. 3, lines 23-25 and col. 4, lines 16-20). Regarding claim 4, said signal generator causes said electromagnetic field of said electromagnetic driver to vary with time (see col. 4, lines 16-20). Regarding claim 5, said electromagnetic driver imparts motion to said magnetic impeller in said liquid sample as a result of a coupled electromagnetic field (see col. 4, lines 16-26). Regarding claim 6, said motion of said magnetic impeller transfers momentum through said liquid sample (see col. 4, lines 19-26). Regarding claim 8, said magnetic impeller is mounted on an axle (30 and/or 40) located within said liquid container. Regarding claim 9, said motion of said magnetic impeller is rotational about said axle (see Fig. 2). Regarding claim 10, the electromagnetic driver has no moving parts (see Fig. 2). Regarding claim 15, said sample container comprises a tube (see Fig. 2). Regarding claim 20, said sample container comprises a container suitable for low gravity applications (see Fig. 2).

Art Unit: 1723

14. Claims 1-7, 10 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Tatevosian et al. (US 4,720,025). Regarding claim 1, Tatevosian ('025) discloses an apparatus for mixing material (2) comprising a container (1); a magnetic impeller (5) located in said sample container; and an electromagnetic driver (6) located in proximity to said magnetic impeller wherein said electromagnetic driver is powered by a signal generator (7). Regarding claim 2, said magnetic impeller has a magnetic field coupled to an electromagnetic field of said electromagnetic driver (see col. 5, lines 2-7).

Regarding claim 3, said signal generator produces a signal of programmed frequency and current (see col. 5, lines 2-7). Regarding claim 4, said signal generator causes said electromagnetic field of said electromagnetic driver to vary with time (see col. 5, lines 2-7). Regarding claim 5, said electromagnetic driver imparts motion to said magnetic impeller in said material (2) as a result of a coupled electromagnetic field (see col. 5, lines 2-16). Regarding claim 6, said motion of said magnetic impeller transfers momentum through said liquid sample (see col. 5, lines 2-16). Regarding claim 7, said motion of said magnetic impeller is random (see col. 5, line 6). Regarding claim 10, the electromagnetic driver has no moving parts (see Fig. 1). Regarding claim 15, said sample container comprises a tube (1).

15. Claims 1-6, 10, 12, 15, 16 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Lu et al. (US 3,680,843). Regarding claim 1, Lu ('843) discloses an apparatus for mixing liquids comprising a liquid sample within a liquid container (2); a magnetic impeller (4) located in said sample container; and an electromagnetic driver (6) located in proximity to said magnetic impeller wherein said electromagnetic driver is

Art Unit: 1723

powered by a signal generator (7). Regarding claim 2, said magnetic impeller has a magnetic field coupled to an electromagnetic field of said electromagnetic driver (see col. 2, lines 13-30). Regarding claim 3, said signal generator produces a signal of programmed frequency and current (see col. 2, lines 31-36 and col. 3, lines 11-13).

Regarding claim 4, said signal generator causes said electromagnetic field of said electromagnetic driver to vary with time (see col. 3, lines 11-13). Regarding claim 5, said electromagnetic driver imparts motion to said magnetic impeller in said liquid sample as a result of a coupled electromagnetic field (see col. 2, lines 45-53).

Regarding claim 6, said motion of said magnetic impeller transfers momentum through said liquid sample (see col. 2, lines 52-55). Regarding claim 10, the electromagnetic driver has no moving parts (see col. 2, lines 55-56). Regarding claim 12, the frequency and current of the programmed signal is controlled by an operator (see col. 2, lines 31-35). Regarding claim 15, said sample container comprises a tube (2). Regarding claim 16, a plurality of vessels are arranged in a geometric array (see drawing). Regarding claim 44, Lu ('843) discloses an apparatus comprising a volume of liquid within a liquid sample, wherein the liquid sample is contained in a liquid sample container comprising a plurality of vessels (3) arranged in a geometric array (see drawing); a permanent magnetic impeller (4) located in said liquid sample container; an electromagnetic driver (6) having an electromagnetic field associated therewith, said electromagnetic driver located in proximity to said permanent magnetic impeller wherein said electromagnetic driver comprises no moving mechanical parts; and a signal generator (7) electrically coupled to said driver wherein said signal generator produces a signal of programmed

Art Unit: 1723

frequency and current which causes said electromagnetic field of said electromagnetic driver to vary with time (see col. 2, lines 31-36 and col. 3, lines 11-13), thus imparting motion to said permanent magnetic impeller in said liquid sample as a result of a coupled electromagnetic field between said permanent magnetic impeller and said electromagnetic driver (see col. 2, lines 45-53), wherein said frequency and current of said program signal is controlled by an operator (see col. 2, lines 31-36 and col. 3, lines 11-13).

16. Claims 1-7, 10-15 and 37-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanderson et al. (US 4,199,265). Regarding claim 1, Sanderson ('265) discloses an apparatus for mixing liquids comprising a liquid sample within a liquid container (22); a magnetic impeller (24) located in said sample container; and an electromagnetic driver (26,28,32,33,24,36) located in proximity to said magnetic impeller wherein said electromagnetic driver is powered by a signal generator (60). Regarding claim 2, said magnetic impeller has a magnetic field coupled to an electromagnetic field of said electromagnetic driver (see col. 1, lines 61-65). Regarding claim 3, said signal generator produces a signal of programmed frequency and current (see col. 5, lines 14-17; Fig. 6). Regarding claim 4, said signal generator causes said electromagnetic field of said electromagnetic driver to vary with time (see Fig. 6). Regarding claim 5, said electromagnetic driver imparts motion to said magnetic impeller in said liquid sample as a result of a coupled electromagnetic field (see col. 1, lines 61-65). Regarding claim 6, said motion of said magnetic impeller transfers momentum through said liquid sample (see col. 2, lines 52-55). Regarding claim 7, said motion of

Art Unit: 1723

said magnetic impeller is random (see col. 4, lines 9-16). Regarding claim 10, the electromagnetic driver has no moving parts (see col. 1, lines 5-9). Regarding claim 11, said programmed frequency and current is controlled by a computer implemented algorithm (see cols. 7 and 8) Regarding claim 12, the frequency and current of the programmed signal is controlled by an operator (see col. 5, lines 14-29; col. 9, lines 19-23). Regarding claims 13 and 14, said signal generator produces a wave form selected from the group consisting of sinusoidal waver, square wave, and sawtooth waves (see Figs. 6 and 8). Regarding claim 15, said sample container comprises a tube (22). Regarding claim 37, Sanderson ('265) discloses a system for mixing liquids comprising a liquid sample within a sample container (22); a magnetic impeller (24) located within said liquid sample container; and a programmable electronic driver (26,28,32,33,24,36) located in proximity to said magnetic impeller and electrically coupled to a signal generator that receives electrical power from a power supply (120,122) and commands from an electronic controller wherein said electronic controller produces a conditioned electronic signal established by an output computer (see Figs. 5 and 7; col. 5, lines 14-29 and cols. 7 and 8). Regarding claim 38 said conditioned electronic signal is produced by means of one or more algorithms programmed into said computer (See col. 5, lines 14-29 and cols. 7 and 8). Regarding claims 39-41, while the reference discloses that an algorithm may receive input in the form of viscosity or other variables (see col. 5, lines 26-29), it is considered that the nature of information provided to the claimed device is a matter of intended use, not structure. As held in *In re Casey*, 152 USPQ 235 (CCPA 1967) "the manner or method in which such machine is to be utilized

is not germane to the issue of patentability of the machine itself". Also, "apparatus claims cover what a device is, not what a device does" (emphasis in original) *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu et al. (US 3,680,843) in view of Cleveland et al. (US 6,357,907). The apparatus of Lu ('843) was discussed above regarding claim 16. While Lu ('843) that a purpose of the invention is to "provide a magnetic mixer in which a multiplicity of liquid sample containers can be mixed simultaneously", it is note explicitly stated the apparatus comprises 24 containers, 96 containers or is circularly arranged containers. Cleveland

Art Unit: 1723

('907) teaches magnetic mixing of 24 containers, 96 containers and circularly arranged containers (see col. 1, lines 5-16; Fig. 1). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the apparatus of Lu ('843) with the containers of Cleveland ('907), because Cleveland ('907) explains that these containers are "commonly used in a wide variety of scientific applications".

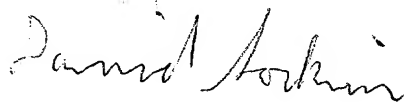
Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

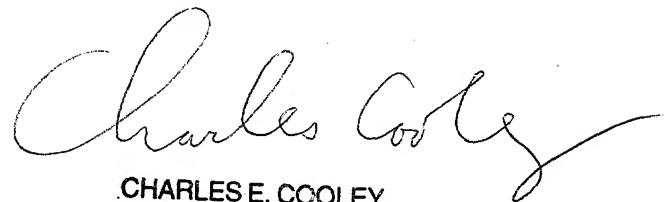
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 8:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



David Sorkin



CHARLES E. COOLEY
PRIMARY EXAMINER